

INTERNATIONAL SEARCH REPORT

International Application No
PCT/US2004/023024

A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 G06T7/00

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
IPC 7 G06T H01J G01R G01N

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, INSPEC

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 6 122 397 A (NELSON ALAN C ET AL) 19 September 2000 (2000-09-19) column 3, line 43 - line 52 column 5, line 30 - line 50 figure 4A ----- -/--	1-8

☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

* Special categories of cited documents :

- *A* document defining the general state of the art which is not considered to be of particular relevance
- *E* earlier document but published on or after the international filing date
- *L* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- *O* document referring to an oral disclosure, use, exhibition or other means
- *P* document published prior to the international filing date but later than the priority date claimed

- *T* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
- *X* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
- *Y* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.
- *&* document member of the same patent family

Date of the actual completion of the international search

8 April 2005

Date of mailing of the international search report

11.05.2005

Name and mailing address of the ISA

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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	<p>XIANGHONG ZHAO ET AL: "Automated image analysis for applications in reservoir characterization"</p> <p>KNOWLEDGE-BASED INTELLIGENT ENGINEERING SYSTEMS AND ALLIED TECHNOLOGIES, 2000. PROCEEDINGS. FOURTH INTERNATIONAL CONFERENCE ON BRIGHTON, UK 30 AUG.-1 SEPT. 2000, PISCATAWAY, NJ, USA, IEEE, US, vol. 2, 30 August 2000 (2000-08-30), pages 620-623, XP010523677</p> <p>ISBN: 0-7803-6400-7</p> <p>section 2</p> <p>figure 3</p>	9,10
X	<p>-----</p> <p>US 2001/036306 A1 (WIENECKE JOACHIM)</p> <p>1 November 2001 (2001-11-01)</p> <p>paragraphs '0056! - '0060!, '0063!, '0068!, '0070!, '0071!</p> <p>figure 1</p>	11
X	<p>-----</p> <p>US 5 513 275 A (KHALAJ ET AL)</p> <p>30 April 1996 (1996-04-30)</p> <p>column 6, line 14 - column 7, line 31</p> <p>figures 1,4-11</p> <p>column 8, line 3 - line 18</p>	11
X	<p>-----</p> <p>US 6 330 354 B1 (COMPANION PIERRE M ET AL)</p> <p>11 December 2001 (2001-12-11)</p> <p>column 7, line 21 - line 60</p> <p>figures 11A,11B,12A,12B</p>	12
A	<p>-----</p> <p>EP 1 146 481 A (NANOGEOMETRY RES)</p> <p>17 October 2001 (2001-10-17)</p> <p>abstract</p> <p>paragraphs '0060!, '0076!, '0086!</p>	1-8
A	<p>-----</p> <p>GONGYUAN QU ET AL: "Wafer defect detection using directional morphological gradient techniques"</p> <p>EURASIP JOURNAL ON APPLIED SIGNAL PROCESSING HINDAWI USA,</p> <p>vol. 2002, no. 7,</p> <p>1 July 2002 (2002-07-01), pages 686-703, XP001202668</p> <p>ISSN: 1110-8657</p> <p>abstract</p> <p>Section 2</p> <p>Section 4</p> <p>figures 6,7,13-15</p>	1-8
A	<p>-----</p> <p>US 4 484 081 A (CORNLYN JR WILLIAM S ET AL) 20 November 1984 (1984-11-20)</p> <p>abstract</p> <p>column 13, line 52 - column 14, line 25</p> <p>-----</p> <p>-/--</p>	9,10

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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT		
Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	<p>US 2003/076989 A1 (MAAYAH KAIS JAMEEL ET AL) 24 April 2003 (2003-04-24) paragraphs '0021!, '0071! - '0079! figure 3</p> <p>-----</p>	11

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Box II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:
2. ☐ Claims Nos.:
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:
3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this International application, as follows:

see additional sheet

1. ☒ As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
- ☐ No protest accompanied the payment of additional search fees.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. claims: 1-8

Applying morphological operations on Scanning Electron Microscope (SEM) images to extract defects from the image under analysis.

2. claims: 9,10,12

Image treatment comprising region growing algorithms from seed points to locate particles or to check the separation of image elements.

3. claim: 11

Dividing an image into single elements of a repetitive pattern and applying statistical analysis on these elements, to detect defective elements.

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Information on patent family members

International Application No

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Patent document cited in search report		Publication date	Patent family member(s)	Publication date
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US 2003076989	A1	24-04-2003	NONE	